

REMARKS

The concurrently filed PROPOSED DRAWING CORRECTION proposes to add the (missing) reference numeral 7 to Fig. 1.

Claims 1-5 and 11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable (obvious) over Dybdal (**newly cited**) in view of Durrant and Worger (both of which were previously cited).

Claims 6, 8-10, 13 and 14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable (obvious) over Dybdal in view of Durrant and Worger and Saulnier (also previously cited).

Claims 7 and 12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Dybdal in view of Durrant, Worger, Saulnier and Dodd (also previously cited).

Applicant respectfully traverses these rejections.

Dybdal and Worger are both from the art of satellite communications and disclose satellite antennas with overlapping patterns; Applicant has no quarrel with the Examiner's brief summaries of the disclosures of these two references.

Durrant is not from the art of satellite communications but, rather, more broadly from the art of spread spectrum modulation of signals. See especially column 7, lines 50-54, and column 8, lines 34-36, where it is stated that the signal "q(t) is delayed by one chip time from [signal] i(t); thus, q(t) and i(t) are offset signals".

With respect to independent claim 5, Durrant (see column 5, lines 58-64) discloses spread spectrum modulated signals "using different sequences".

Saulnier also is **not** from the field of satellite communications, but discloses spread spectrum signals for eliminating the problems of multipath interference, and discloses the concept of delaying one signal relative to a primary signal "by more than one chip interval". (See column 3, lines 50-67.)

With respect to claims 7 and 12, Dodd describes "a system that eliminates nulls created by summing signals derived from two broad beam antennas on a spacecraft that point in different directions". Dodd also refers to the "earth side" and "anti-earth side" antennas of a satellite. Dodd **changes the phase (by phase shifters) of the signals** derived from the two antennas in order to eliminate these nulls. Dodd also, as stated by the Examiner, "teaches a coupler for signals from an antenna and receiver means with two receivers". (See column 1, two column 2, line 37.)

Furthermore, Dybdal (newly cited) merely discloses a method of increasing multi-beam system capacity by dynamically modifying the frequency sub-bands, the bandpass and the polarization. There is no disclosure or even a remote suggestion in Dybdal of Applicant's claimed use of spread spectrum modulated signals with code shift or the use of different codes.

Neither Durrant nor Saulnier disclose or suggest the transmission or reception of signals via "at least two antennas whose radiation patterns overlap".

Dodd is directed to the same problem as Applicant's invention, "multi-path phenomenon when two separate omni-directional antennas are coupled on opposite sides", but Dodd's method is **quite different**: phase shifters are **required** on one of the antenna coupler paths, and are controlled by a computer in order to maximize the received signal level. In **contrast**, Applicant's

claimed invention is a method and apparatus in which spread spectrum modulation is employed with either a delay, on one of the coupler/antenna paths (transmission/reception), or different codes (transmission).

Thus, Applicant respectfully submits that **Dodd is the most pertinent** of the references applied by the Examiner but, as explained above, Dodd solves the same problem in a manner which is **quite different** from Applicant's solution as defined in claims 1-16.

For the three statutory prior art rejections, Applicant notes that the Examiner relies on combinations of three, four and five references, respectively. Even though Applicant recognizes that there is no legal limit on the number of references which an examiner can combine, and even though Applicant realizes it is difficult for an examiner to read an Applicant's disclosure without engaging in the prohibited use of hindsight knowledge to reconstruct the teachings of these references (by selectively choosing and combining bits and pieces from different references), Applicant respectfully submits that the Examiner has (at least subconsciously) engaged in such practice in attempting to find obviousness in the subject matter of each of the rejected claims.

Furthermore, even assuming, *arguendo*, the correctness of the Examiner's characterization of the disclosure of **each** of these applied references, Applicant respectfully submits that, even if a person were to combine the teachings of these **individual** references, there would not be achieved the subject matter of claims 1-16 for the reasons presented above. For example, in the rejection of claims 1-5 and 11, Applicant agrees that Dybdal does not teach:

antennas whose radiation patterns overlap,
transmitting or receiving spread spectrum
modulated signals,

summing signals,
demodulating signals or
delaying signals by a difference of at least one chip.

The Examiner then makes the following **conclusory** statement of obviousness:

It would have been obvious to one skilled in the art at the time the invention was made to make the Dybdal adapt [sic] to include

antennas whose radiation patterns overlap,
transmitting and receiving spread spectrum
modulated signals,
summing signals,
demodulating signals, and
delaying signals by a difference of at least one chip

because this would allow for the use of a single receiver that receives the sum of signals from antennas without the necessity of selecting a receive signal. (emphasis added)

The above paragraphs refer to the Examiner's rejection of claim 1, and the comments in support of the rejection of claim 2 are similar in that they recite a litany of what Dybdal "does not teach", and concludes with another litany of features which one is "to include" in Dybdal in order to find obviousness. The same is true for the Examiner's comments in support of the rejection of claim 11.

Applicant respectfully submits that the above rejection of claims 6, 8-10 and 13-14 is flawed for the same reasons as indicated above, but in this case the Examiner combines **four** references, again presents another litany of the features missing from the individual ones of the four references, and then concludes with another conclusory statement containing a litany of the features which one is **to include** in Dybdal's disclosure.

Again, the same is true for the rejection of claims 7 and 12, but the Examiner combines the disclosures of **five (5)** references.

Thus, Applicant must respectfully submit that the Examiner has not made out a *prima facie* case of obviousness of the subject matter of any of the claims 1-14, because the Examiner has engaged in the prohibited use of hindsight to choose only selected portions of either three, four or five references, and to combine these selected portions in a manner which could have been suggested to the Examiner only by the Examiner's hindsight knowledge of Applicant's own disclosure. As noted above, even if these teachings were combined, there would not be produced the subject matter of any of the rejected claims 1-14 (or new claims 15 and 16), i.e., the subject matter which permits achieving complete satellite antenna coverage without duplicating transmitters or receivers, and which eliminates interference between overlapping radiation patterns of the two antennas.

Applicant has added new dependent claims 15 and 16 to recite additional features which are not disclosed or suggested in the prior art, especially Dodd.

In summary, then, Applicant respectfully requests the Examiner to reconsider and withdraw the rejections of claims 1-14 for the reasons presented above, and to find the application to be in condition for allowance with claims 1-14 and the new dependent claims 15 and 16 (which should be allowable for the same reasons as their parent claims are allowable, and for the further reason of the additional limitations found in these new dependent claims).

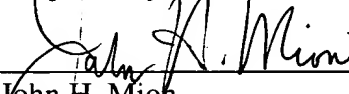
However, if for any reason the Examiner feels that the application is not now in condition for allowance, he is respectfully requested to **call the undersigned attorney** to discuss any

AMENDMENT UNDER 37 C.F.R. § 1.111
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unresolved issues and to expedite the disposition of the application. (Applicant amends claim 13 to correct the improper multiple dependencies of claims 13 and 14, and files concurrently herewith a Multiple Dependent and Excess Claim Fee Payment Letter With Required Fees to cover the multiple dependent claim fee and the excess claim fees for this application.)

Applicant files concurrently herewith a Petition (with fee) for an Extension of Time of Three Months. Applicant hereby petitions for any extension of time which may be required to maintain the pendency of this application, and any required fee for such extension is to be charged to Deposit Account No. 19-4880. The Commissioner is also authorized to charge any additional fees under 37 C.F.R. § 1.16 and/or § 1.17 necessary to keep this application pending in the Patent and Trademark Office or credit any overpayment to said Deposit Account No. 19-4880.

Respectfully submitted,



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